

### **REMARKS/ARGUMENTS**

Claims 45-100 are pending in the application. Claims 45-100 are rejected. Claims 59 and 93 are objected to. The Applicants have amended claims 59 and 93 to fix the informalities. No new matter has been introduced into the application. As explained in more detail below, Applicants submit that all claims are in condition for allowance and respectfully request such action.

#### **Claim Objections**

Claim 93 is objected to because the listing of the claims provides two claims numbered as “93”. The Applicants thank the Examiner for noticing this inadvertent typographical error. Appropriate correction has been made to renumber the 2<sup>nd</sup> claim 93 to read claim 94.

Claim 59 is objected to because the claim contains the limitation “hierarchically simultaneously transmitted data streams”. The Applicants have amended the claim to recite “hierarchically modulated simultaneously transmitted data streams” as suggested by the Examiner.

#### **Claim Rejections – 35 USC § 102**

Claims 45-100 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Pat. No. 5,987,518 to *Gotwald* (“the ‘518 patent”). The Applicants respectfully request reconsideration in view of the Remarks below.

The Office Action and the Advisory Action allege the ‘518 patent teaches hierarchically modulated simultaneously transmitted data streams as recited in context of claims 45 – 100. More specifically, the Office Action asserts Figure 2 of the ‘518 patent “indicates that the MPEG2 data, IP data, and MPEG2 control messages are prioritized in the priority modules 48,

50, and 52, respectively, and are transmitted simultaneously after being multiplexed and modulated by MPEG2 Multiplexing Driver 56 and Modulator 62.” (Office Action dated December 14, 2005, page 2) The Applicants respectfully disagree that the MPEG2, data IP data, and MPEG2 control messages are transmitted simultaneously in a plurality of hierarchically modulated simultaneously transmitted data streams which respectively have a different priority assigned to the contents therein corresponding to a particular class of the content.

First, as recognized by the Office Action, each of the three data types are “prioritized” by three separate and distinct priority modules (*see, e.g.*, Col. 4, lines 24 – 27, 32 – 37, and 39 – 42). Therefore, the three categories are not prioritized among each other at the priority modules, but rather prioritized only within a selected protocol. The specification of the ‘518 patent continues to state that the prioritizing queuing is described in greater detail in connection with Figs 4 and 5. (*see* Col. 4, lines 25 – 28 and 34 – 36).

Figure 4 illustrates priority queuing using priority module 48 as an example before entering the multiplexing driver. As explicitly stated, “[e]ach message that enters the MPEG2 multiplexing driver (FIG. 2) has an associated priority assigned to it.” (Col. 5, lines 60 – 1). Thus, the only prioritizing is performed within the priority module and not afterwards, for example, at the multiplexing driver. In fact, as set forth in the ‘518 patent:

The driver processes the queue from head (FIFO 108) to tail (FIFO 100). Messages with the same priority are processed in a first-in first-out manner. Each FIFO represents a different priority level, with the highest priority being assigned to the head FIFO 108 and the lowest priority (priority band 0) associated with the tail FIFO 100.

(Col. 5, lines 62 – 67, emphasis added). The queues are then transmitted through a single broadband channel. (*see* Col. 3, lines 2 – 3, 51 – 53, and Fig. 1, item 16) Therefore, according to

the text cited by the Office Action, the data is only prioritized among that individual protocol type (i.e., MPEG2 data, IP data, and MPEG2 control messages) and then broadcast in a high to low priority, where those of the same priority are broadcast in a first in – first out manner across a single broadcast channel. Therefore, there can be no hierarchically modulated simultaneously transmitted data streams which respectively have a different priority assigned to the contents therein corresponding to a particular class of the content, for example, as recited in claims 45, 50, 56, and 59.

In rebuttal, the Advisory Action dated May 24, 2006 states it is clear from the disclosure of Gotwald that there is indeed a hierarchically modulated transmitted data stream.” (page 2). The Applicants do not contend that Gotwald does not show a single data stream that contains different protocol types (i.e., MPEG2 data, IP data, and MPEG2 control messages) as set forth in the Advisory Action. The Applicants, rather, disagree that there are a plurality of hierarchically modulated simultaneously transmitted data streams which respectively have a different priority assigned to the contents therein corresponding to a particular class of the content.

Figure 2 more readily illustrates one embodiment of hierarchical modulation that may be utilized in achieving the simultaneous transmission, for example, in the DVB-T standard. As described in the Substitute Specification, a MPEG-2 bit stream can be split into two parts, such as a high priority (HP) stream and a low priority (LP) stream, “both of which are transmitted simultaneously.” (See paragraph 0022). A bit sequence of the data which modulates the HP stream is used to select quadrant 31 of the constellation diagram shown in Figure 2, whereas the bit sequence of the data which modulates the LP stream only selects a particular constellation point 33.

The result is that the HP stream is more robust as a receiver can more easily identify a quadrant over a particular constellation point. However, the bit rate of the HP stream will be less than that of the LP stream. Thus the LP stream can be utilized by the receiver where the C/N ratio is such as to allow the receiver to detect not only the quadrant but also a particular constellation point.

(Paragraph 22). As explained in more detail below, by utilizing this modulation scheme, different data streams can be sent simultaneously without multiplexing. In contrast, as discussed above, Gotwald merely discusses multiplexing of data, which is a less efficient process where data is taken from different streams and sent in a sequential order, but not simultaneously in a plurality of data streams as claimed. In fact, the Applicants cannot find a plurality of data streams as recited (such as the HP and LP data streams discussed in relation to Figure 2 and 3 of the present application) anywhere in Gotwald.

Exemplary embodiments having the claimed feature can be seen in Fig. 3 of the present application, where hierarchically modulated simultaneously transmitted data streams (24 and 26) are shown. Splitter 22 identifies the priority assigned to the contents of incoming packets and passes them to the appropriate stream (24 or 26) for transmission by the transmitter 11. (Specification, page 9, paragraph 0028) In the illustrated example, 24 is a high priority stream and 26 is a low priority stream, each being simultaneously transmitted.

Moreover, as shown in Figure 4, unlike merely prioritizing MPEG2 data, IP data, MPEG2 control messages, or other distinct information by only the protocol, aspects of the invention allow the prioritization of data within these protocols, such as text, graphics, data files, email and video. Looking more closely at figure 4, one can see the advantages of the recited claims over Gotwald. Figure 4 illustrates the use of a plurality of hierarchically modulated

simultaneously transmitted data streams which respectively have a different priority assigned to the contents therein corresponding to a particular class of the content. As explained in the Substitute Specification, the classifier 35 may assign priority of the data classes or types according to user profiles, such as illustrated profiles A and B shown in Figure 4. "The data is then encoded and placed in data containers before being passed to splitter 22 which identifies from the containers the priority assigned to their contents and passes them to the appropriate stream 24,26 [as opposed to a single multiplexed stream] for transmission by the transmitter 11." (Sub. Spec., para. 0026).

In the illustrated example, profile A relates to a mobile terminal and profile B relates to a fixed terminal. In the example, the mobile terminal profile ("A") has the "text" data type set to a HP stream while the "video" data type is set to a LP stream. In the described embodiment, the HP stream is more reliable (a receiver can more easily identify a quadrant over a particular constellation point), however, the bit rate of the HP stream will be less than that of the LP stream. Thus the LP stream can be utilized by the receiver where the C/N ratio is such as to allow the receiver to detect not only the quadrant but also a particular constellation point.

For example, looking again at Figure 2, if the constellation diagram was for 64-QAM where each constellation point (such as point 33) within quadrant 31 was represented by 6 bits, each constellation point may have the same identical first pair of bits, such as "10" and differ by the remaining four bits. For example, point 33 may be represented by 100000 and another point within quadrant 31 may be represented by 100010. In such an example, in a hierarchical modulation using a plurality of data streams, the HP stream value may be "10" and the LP stream value for point 33, is "0000". Therefore, the text of the transmission will be carried on the HP

stream, while the video of the transmission will be carried on the LP stream, which is transmitted simultaneously.

For at least these reasons, the Applicants respectfully submit that the '518 patent does not teach, suggest, or otherwise disclose the subject matter of claims 45 – 100.

### **CONCLUSION**

All rejections having been addressed, applicant respectfully submits that the instant application is in condition for allowance, and respectfully solicits prompt notification of the same. Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the number set forth below.


Applicant believes there is no fee due in association with the filing of this response, however, should there be any fees due the Commissioner is hereby authorized to charge any such fees or credit any overpayment of fees to Deposit Account No. 19-0733.

Respectfully submitted,

**BANNER & WITCOFF, LTD.**

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